

Name: _____

Date: _____

Exam: Function Reflections (Practice version 1)

1. Let function f be defined by the polynomial below:

$$f(x) = -5x^4 - 8x^3 + 2x^2 + 3x - 7$$

Draw lines that match each function reflection with its polynomial:

Reflections

Polynomials

$-f(-x)$ •

• $-5x^4 + 8x^3 + 2x^2 - 3x - 7$

$f(-x)$ •

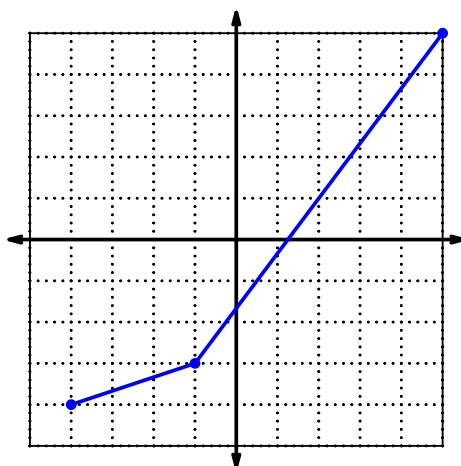
• $5x^4 + 8x^3 - 2x^2 - 3x + 7$

$-f(x)$ •

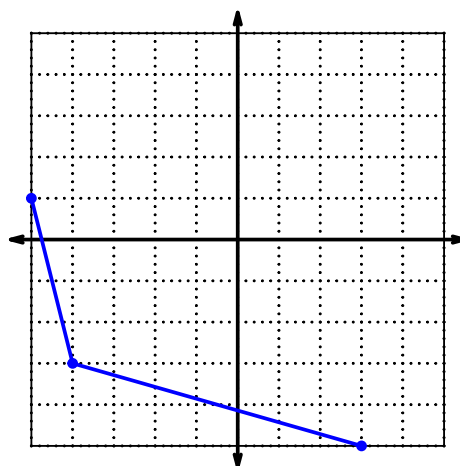
• $5x^4 - 8x^3 - 2x^2 + 3x + 7$

2. In each xy plane shown below, a function is graphed with blue. Draw the indicated reflections (as a second curve, indicated in legend) with black (or with whatever you have). The x axis is horizontal and the y axis is vertical (as typical), and the scale is equal on both axes.

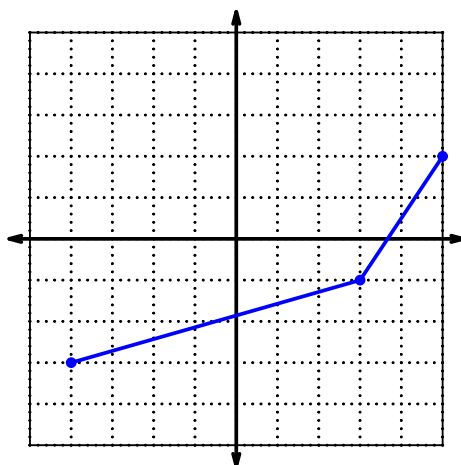
• $y = g(x)$
• $y = g(-x)$



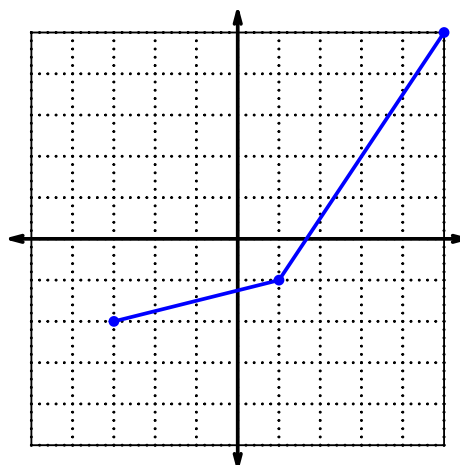
• $y = h(x)$
• $y = -h(-x)$



• $y = m(x)$
• $y = m^{-1}(x)$



• $y = p(x)$
• $y = -p(x)$



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For all questions on this page, the functions f , g , and h are defined by the table below.

x	$f(x)$	$g(x)$	$h(x)$
1	8	3	4
2	3	5	1
3	9	8	7
4	4	6	9
5	7	7	3
6	1	4	5
7	2	9	6
8	5	2	8
9	6	1	2

3. Evaluate $h(6)$.

4. Evaluate $f^{-1}(3)$.

5. By filling more rows of the table, it is possible to make function g **odd**. If that were done, what would be the value of $g(-4)$?

6. By filling more rows of the table, it is possible to make function f **even**. If that were done, what would be the value of $f(-7)$?

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7. A function, f , is **even** if $f(x) = f(-x)$ for all x in the domain. A function, g , is **odd** if $g(x) = -g(-x)$ for all x in the domain.

Let polynomial p be defined with the following equation:

$$p(x) = -x^2 + 1$$

- a. Express $p(-x)$ as a polynomial in standard form.

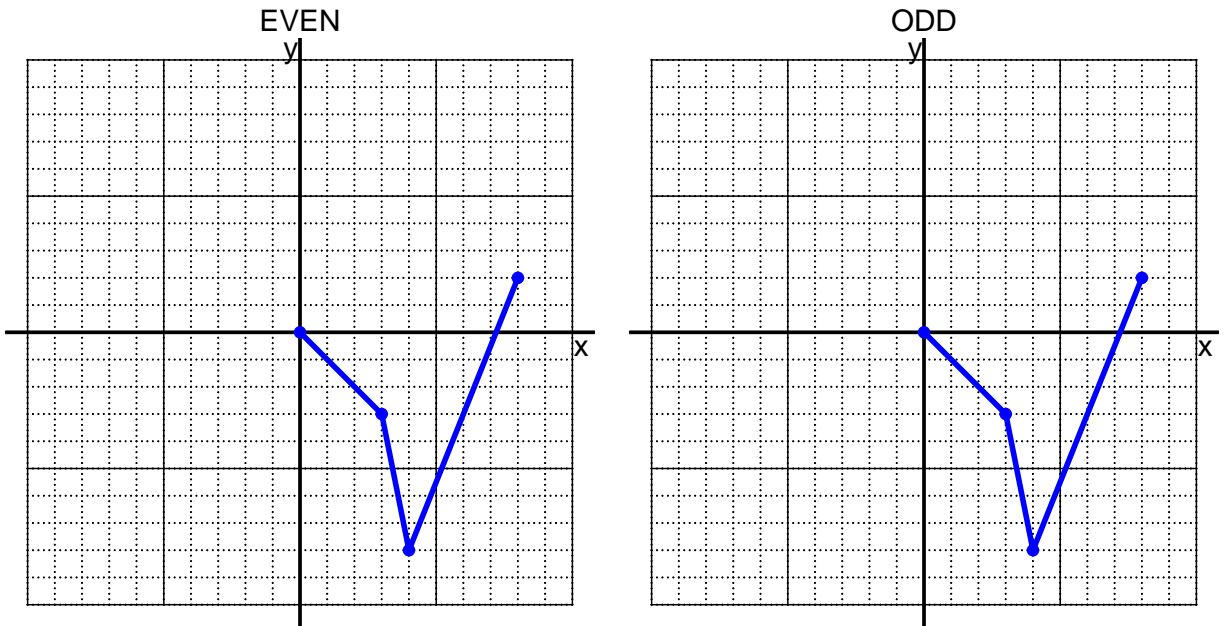
- b. Express $-p(-x)$ as a polynomial in standard form.

- c. Is polynomial p even, odd, or neither?

- d. Explain how you know the answer to part c.

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8. I have drawn half of a function. Draw the other half to make it even or odd.



9. Let function f be defined with the equation below.

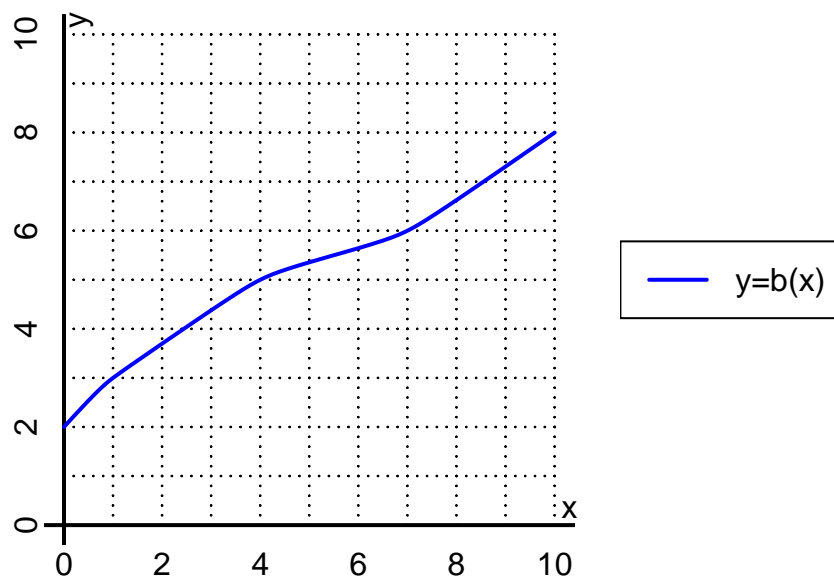
$$f(x) = \frac{x-2}{5}$$

a. Evaluate $f(67)$.

b. Evaluate $f^{-1}(12)$.

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10. The function b is represented by the curve $y = b(x)$ graphed below.



a. Evaluate $b(4)$.

b. Evaluate $b^{-1}(6)$.

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11. Function f is defined by the table below.

a. Complete the columns for $-f(x)$ and $f(-x)$ and $-f(-x)$.

x	$f(x)$	$-f(x)$	$f(-x)$	$-f(-x)$
-2	6			
-1	3			
0	0			
1	-3			
2	6			

b. Is function f even, odd, or neither?

c. How do you know the answer to part b?